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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Leonard N. Schiff

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EXAMINER

LEE, ANDREW CHUNG CHEUNG

ART UNIT

PAPER NUMBER

2476

NOTIFICATION DATE

DELIVERY MODE

11/25/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/602,358	Applicant(s) SCHIFF, LEONARD N.	
	Examiner Andrew C. Lee	Art Unit 2476	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-32, 35-37 and 39-42 is/are pending in the application.
- 4a) Of the above claim(s) 12, 24, 25, 33, 34 and 38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-32, 35-37 and 39-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/02/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

In view of the Appeal Brief filed on 08/21/2009, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Ayaz R. Sheikh/

Supervisory Patent Examiner, Art Unit 2476

_____.

Ayaz Shiekh,

Supervisory Patent Examiner, Art Unit 2476

DETAILED ACTION

Response to Amendment

1. Claims 1 -11, 13-23, 26-32, 35- 37, 39 -42 are pending.
Claims 12, 24, 25, 33, 34, 38 had been canceled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 11, 13 - 23, 26 – 32, 35 – 37, 39 – 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beshai et al. (6034960), and Nakano et al. (5446739) in view of Ketseoglous et al. (5732076).

Regarding claim 1, 35, Beshai et al. disclose a method, a terminal device for transmitting data in a communication system wherein said data is transmitted in communication frames, the communication frames comprising predetermined time slots (*“guaranteed time-slot allocation” interpreted as predetermined time slots, Fig. 10*) a method, a terminal device comprising: receiving, at a terminal device, one or more scattering instructions (*“being received by a switch”; Fig. 3a, col. 7, lines 2 – 14, lines 24 – 27*), the scattering instructions (*Fig. 4, “reverse binary mapping”; col. 7, lines 28 – 45*) providing information for partitioning said data into intervals, each interval shorter in duration than each of said predetermined time slots (*“applying reverse-binary ordering*

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to either the sequence in which time –slots are updated ...is an effective way of scattering the time-slot allocations” interpreted as scattering instructions providing information, Fig. 7, col. 5, lines 1 – 7, col. 8, lines 16 – 28; and “guaranteed time-slot allocation” interpreted as predetermined time slots, Fig. 10, col. 9, lines 53 – 62), placing at least two of said intervals into at least one of said communication frames (Fig. 8, col. 8, lines 41 – 40), and transmitting the communication frames (Fig. 9, element 4, “to other node in network”; col. 8, lines 59 – 64).

Beshai et al. do not disclose explicitly wireless receiving, at a terminal device, one or more instructions, and the at least two intervals placed within the at least one communication frame in a non-contiguous manner.

Nakano et al. in the same field of endeavor teach wireless receiving, at a terminal device, one or more instructions. (*Abstract, col. 4, lines 34 – 51, Fig. 4, col. 5, lines 36 – 52*), the at least two intervals placed within the at least one communication frame in a non-contiguous manner (*“two time slots are assigned such that the portable station will not receive continuous time slots”; Fig. 2, col. 4, lines 34 – 51*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Beshai et al. to include the features of wireless receiving, at a terminal device, one or more instructions, and the at least two intervals placed within the at least one communication frame in a non-contiguous manner as taught by Nakano et al. One of ordinary skill in the art would be motivated to do so for providing a radio communication system capable of performing communication

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using a plurality of slots in one TDMA frame by a portable station having a single receiver *(as suggested by Nakano et al., see col. 1, lines 46 – 49)*.

Regarding claims 2, 9, 36, Beshai et al. disclose the method, terminal device, apparatus claimed, further comprising receiving configuration information, wherein the one or more scattering instructions are included with the configuration information *(“updated with stream-number entries using reverse-binary mapping, each stream will receive a well-scattered assortment of time-slots” interpreted as receiving configuration information, wherein the one or more scattering instructions are included with the configuration information; Fig. 6, Fig. 7, col. 8, lines 11 – 24)*.

Regarding claims 3, 10, 37, Beshai et al. disclose the method, terminal device, apparatus claimed a memory for storing time-scattering control information *(Fig. 1, element 2 cell buffer memory, col. 5, lines 10 – 17)*, wherein one or more scattering instructions comprise an index into a memory of stored time-scattering control information *(Fig. 5, Fig. 6, Fig. 9, col. 10, lines 28 – 34)*.

Regarding claims 4, 11, Beshai et al. disclose the method, terminal device, apparatus claimed wherein the memory is disposed within the terminal device *(Fig. 1, element 2 cell buffer memory correlates to the memory is disposed within the terminal device; col. 4, lines 61 – 67)*.

Regarding claims 5, 13, Beshai et al. disclose the method, terminal device claimed wherein the one or more scattering instructions comprise a tabular indication of how to scatter the intervals data *(Fig. 4, Fig. 5, col. 7, lines 25 – 41)*.

Regarding claim 6, Beshai et al. disclose the method claimed wherein the tabular indication specifies, by time interval identifier, a starting location for the scattered data (*Fig. 16, Fig. 17, col. 15, lines 2 – 21*).

Regarding claims 7, 14, Beshai et al. disclose the method, terminal device claimed wherein the one or more scattering instructions comprise an algorithm for temporally scattering the data, how to scatter the interval (*“reverse-binary mapping” interpreted as one or more scattering instructions comprise an algorithm for temporally scattering the data; Fig. 4, Fig. 5, col. 7, lines 25 – 47*).

Regarding claims 8, Beshai et al. disclose a terminal device (*“switch”, Fig. 1*) transmitting data in a communication system wherein said data is transmitted in communication frames, the communication frames comprising predetermined time slots (*“guaranteed time-slot allocation” interpreted as predetermined time slots, Fig. 10*) the terminal device (*“switch”, Fig. 1*) comprising: a processor (*Fig. 9, element 7 “CAC processor” interpreted as to a processor; col. 8, lines 66 – 67*); a memory of stored time-scattering control information coupled to the processor (*Fig. 1, element 2, “a cell buffer memory”, col. 4, lines 61 – 67*) and a machine accessible medium (*Fig. 1, element 5 scheduler correlates to a machine accessible medium; col. 5, lines 1 – 16*), coupled to the processor, having instructions encoded therein, the instructions, when executed by the processor, cause the terminal device to: receive one or more scattering instructions (*“being received by a switch”; Fig. 3a, col. 7, lines 2 – 14, lines 24 – 27*), the scattering instructions (*Fig. 4, “reverse binary mapping”; col. 7, lines 28 – 45*) providing information for partitioning said data into intervals, each interval shorter in duration than each of

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said predetermined time slots (*“applying reverse-binary ordering to either the sequence in which time –slots are updated ...is an effective way of scattering the time-slot allocations” interpreted as scattering instructions providing information, Fig. 7, col. 5, lines 1 – 7, col. 8, lines 16 – 28; and “guaranteed time-slot allocation” interpreted as predetermined time slots, Fig. 10, col. 9, lines 53 – 62*), placing at least two of said intervals into at least one of said communication frames (*Fig. 8, col. 8, lines 41 – 40*), and transmitting the communication frames (*Fig. 9, element 4, “to other node in network”; col. 8, lines 59 – 64*).

Beshai et al. do not disclose explicitly wireless receiving, at a terminal device, one or more instructions, and the at least two intervals placed within the at least one communication frame in a non-contiguous manner.

Nakano et al. in the same field of endeavor teach wireless receiving, at a terminal device, one or more instructions. (*Abstract, col. 4, lines 34 – 51, Fig. 4, col. 5, lines 36 – 52*), the at least two intervals placed within the at least one communication frame in a non-contiguous manner (*“two time slots are assigned such that the portable station will not receive continuous time slots”; Fig. 2, col. 4, lines 34 – 51*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Beshai et al. to include the features of wireless receiving, at a terminal device, one or more instructions, and the at least two intervals placed within the at least one communication frame in a non-contiguous manner as taught by Nakano et al. One of ordinary skill in the art would be motivated to do so for providing a radio communication system capable of performing communication

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using a plurality of slots in one TDMA frame by a portable station having a single receiver (*as suggested by Nakano et al., see col. 1, lines 46 – 49*).

Regarding claims 15, 26, Beshai et al. disclose a method, an apparatus for transmitting data in a communication system wherein said data is transmitted in communication frames, the communication frames comprising predetermined time slots (*“guaranteed time-slot allocation” interpreted as predetermined time slots, Fig. 10*) the method, apparatus comprising: receiving scattering instructions (*being received by a switch”; Fig. 3a, col. 7, lines 2 – 14, lines 24 – 27 ;“applying reverse-binary ordering to either the sequence in which time –slots are updated ...is an effective way of scattering the time-slot allocations” interpreted as scattering instructions providing information, Fig. 7, col. 5, lines 1 – 7, col. 8, lines 16 – 28*). Beshai et al. also disclose generating a schedule of transmission for the terminal device based on the scattering instructions (*“applying reverse-binary ordering” correlates to generating a schedule of transmission, col. 8, lines 16 – 20*), the schedule for partitioning said data into intervals, each interval shorter in duration than each of said predetermined time slots (*“applying reverse-binary ordering to either the sequence in which time –slots are updated ...is an effective way of scattering the time-slot allocations” interpreted as scattering instructions providing information, Fig. 7, col. 5, lines 1 – 7, col. 8, lines 16 – 28; and “guaranteed time-slot allocation” interpreted as predetermined time slots, Fig. 10, col. 9, lines 53 – 62*), placing at least two of said intervals into at least one of said communication frames (*Fig. 8, col. 8, lines 41 – 40*), Beshai et al. disclose implicitly the at least two intervals placed within the at least one communication frame in a non-contiguous manner (*“receive the*

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well-scattered time-slots 0, 4, 8 and 12” interpreted as the at least two intervals placed within the at least one communication frame in a non-contiguous manner, Fig. 7, col. 8, lines 16 – 28); and transmitting the schedule of transmission to the terminal device (“dequeued from the cell buffer memory to the link for transmission” interpreted as transmitting the schedule of transmission to the terminal device, Fig. 9, col. 10, lines 28 – 34, col. 9, lines 37 – 52).

Beshai et al. do not disclose explicitly wireless receiving instructions, receiving a request from a terminal device for access to a communications channel, the at least two intervals placed within the at least one communication frame in a non-contiguous manner.

Nakano et al. in the same field of endeavor teach wireless receiving instructions (*Abstract, col. 4, lines 34 – 51, Fig. 4, col. 5, lines 36 – 52*), receiving a request from a terminal device for access to a communications *channel* (“*request communication channel*”; *Fig. 5, col. 6, lines 1 – 4*), the at least two intervals placed within the at least one communication frame in a non-contiguous manner (“*two time slots are assigned such that the portable station will not receive continuous time slots*”; *Fig. 2, col. 4, lines 34 – 51*).

At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Beshai et al. to include the features of wireless receiving instructions, receiving a request from a terminal device for access to a communications channel, the at least two intervals placed within the at least one communication frame in a non-contiguous manner as taught by Nakano et al. One of

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ordinary skill in the art would be motivated to do so for providing a radio communication system capable of performing communication using a plurality of slots in one TDMA frame by a portable station having a single receiver (*as suggested by Nakano et al., see col. 1, lines 46 – 49*).

Regarding claims 16, 27, Beshai et al. disclose the method, apparatus claimed wherein receiving the request comprises receiving an indication of the amount of data queued at the terminal device for communication (*“The header row specifies the guaranteed time-slot allocations required by each stream” interpreted as receiving an indication of the amount of data queued at the terminal device for communication, Fig. 10, col. 9, lines 55 – 60*).

Regarding claims 17, 28, Beshai et al. disclose the method, apparatus claimed wherein the schedule of transmission comprises a list of time intervals (*“the number of time-slots actually allocates to each stream over several frame-cycles” correlates to schedule of transmission comprises a list of time intervals, Fig. 10, Fig.11, col. 9, lines 55 – 65*).

Regarding claims 18, 21, 29, Beshai et al. disclose the method, apparatus claimed wherein each time interval comprises a starting location in one of said communication frames and a transmission duration (*Fig. 2, col. 5, lines 36 – 46, Fig. 10, col. 9, lines 55 – 65*).

Regarding claims 19, 30, Beshai et al. disclose the method, apparatus claimed further comprising transmitting modulation control information for the time scattered data (*Fig. 2a, col. 5, lines 17 – 26*).

Regarding claim 20, 31, Beshai et al. disclose the method claimed wherein the communications frames are divided into a number of time slots in accordance with a dividing rate (*col. 9, lines 2 – 5, lines 53 – 62, Fig. 10*).

Regarding claim 22, Beshai et al. teach the method, apparatus claimed wherein the starting location comprises a first time interval identifier and the transmission duration comprises a second time interval identifier (*Fig. 10, col. 9, lines 55 – 65*).

Regarding claims 23, 32, Beshai et al. disclose the method, apparatus claimed further comprising receiving data from the terminal device, transmitted in a scattered manner per the scattering instructions, and reordering the data in accordance with the scattering schedule to obtain the data in its originally intended order (*col. 9, lines 55 – 67, col. 10, lines 1 – 9*).

Regarding claims 39, 40, 41, 42, Beshai et al. disclose a terminal device for transmitting data in a communication system wherein said data is transmitted in communication frames, the communication frames comprising predetermined time slots (*“guaranteed time-slot allocation” interpreted as predetermined time slots, Fig. 10*) comprising: a receiver to receive data scattering instructions (*“received by a switch”; Fig. 3a, col. 7, lines 2 – 14, “applying reverse-binary ordering to either the sequence in which time –slots are updated ...is an effective way of scattering the time-slot allocations” interpreted as receive data scattering instructions, Fig. 7, col. 5, lines 1 – 7, col. 8, lines 16 – 28*); Beshai et al. also disclose a transmitter to transmit (*scheduler, Fig. 18*), a processor (*Fig. 9, element 7 “CAC processor” interpreted as to a processor; col. 8, lines 66 – 67*) configured to, in accordance with the data scattering instructions,

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temporally scattered data (*“the well-scattered time-slots 0, 4, 8 and 12” interpreted as to transmit, a processor configured to, in accordance with the data scattering instructions, temporally scattered data, Fig. 7, col. 8, lines 16 – 28, “dequeued from the cell buffer memory to the link for transmission” interpreted as to transmitting the temporally scattered data, Fig. 9, col. 10, lines 28 – 34*). Beshai et al. implicitly disclose in accordance with the data scattering instructions, temporally scatter data, divided into at least two temporally non-contiguous time intervals, each time interval having a duration shorter than a time slot duration (*“applying reverse-binary ordering to either the sequence in which time –slots are updated ...is an effective way of scattering the time-slot allocations” interpreted as in accordance with the data scattering instructions, temporally scatter data, Fig. 7, col. 5, lines 1 – 7, col. 8, lines 16 – 28; and “guaranteed time-slot allocation” interpreted as a time slot duration, Fig. 10, col. 9, lines 53 – 62, Fig. 10*),

Beshai et al. do not disclose explicitly wirelessly receive data instructions, divided into at least two temporally non-contiguous time intervals, each time interval having a duration shorter than a time slot duration.

Nakano et al. in the same field of endeavor teach wireless receive data instructions (*Abstract, col. 4, lines 34 – 51, Fig. 4, col. 5, lines 36 – 52* divided into at least two temporally non-contiguous time intervals, each time interval having a duration shorter than a time slot duration (*“two time slots are assigned such that the portable station will not receive continuous time slots”; Fig. 2, col. 4, lines 34 – 51, Abstract*).

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At time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the teachings of Beshai et al. to include the features of receive data instructions, divided into at least two temporally non-contiguous time intervals, each time interval having a duration shorter than a time slot duration as taught by Nakano et al. One of ordinary skill in the art would be motivated to do so for providing a radio communication system capable of performing communication using a plurality of slots in one TDMA frame by a portable station having a single receiver (*as suggested by Nakano et al., see col. 1, lines 46 – 49*).

Response to Arguments

4. Applicant's arguments filed on 8/21/2009 with respect to claims 1 – 11, 13 – 23, 26 – 32, 35 – 37, 39 – 42 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Hangen et al. (4792948).
- b) Dutta (US 6301232 B1).
- c) Kim et al. (4625308).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571)272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew C Lee/

Examiner, Art Unit 2476

<11/20/2009>

/Ayaz R. Sheikh/

Supervisory Patent Examiner, Art Unit 2476